

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 01-313927

(43)Date of publication of application : 19.12.1989

(51)Int.Cl.

H01L 21/205

(21)Application number : 63-146560

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(22)Date of filing : 14.06.1988

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(54) COMPOUND-SEMICONDUCTOR CRYSTAL GROWTH METHOD

(57)Abstract:

PURPOSE: To enable a compound semiconductor crystal to grow at a temperature lower than conventional devices, and to improve the performance of a device using a hetero-junction by employing a phenyl compound of a constituent component making up the compound semiconductor crystal as at least one kind of a raw material gas.

CONSTITUTION: (C₆H₅)₃Ga (triphenylgallium; TPG) is used in place of (CH₃)₃Ga (trimethylgallium; TMG) and (C₂H₅)₃Ga (triethylgallium; TEG) and the like which have been employed as a gaseous raw material substance in a conventional atomic layer epitaxy method. TPG has a group having molecular weight higher than TMG and TEG, and is decomposed at a comparatively low temperature. Accordingly, crystal growth through the atomic layer epitaxy method can progress at a low temperature, a hetero-interface having steep band structure and an impurity distribution profile can be formed, and the performance of a device can be improved.

LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

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